

W5YI

America's Oldest Ham Radio Newsletter **REPORT**

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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Senate's Y2K panel issues 100-day countdown report

"Y2K could test us all. No one knows for sure what will happen following rollover to January 1. We are hoping for the best, but taking necessary and prudent steps to prepare for any contingencies. At the same time, FEMA is working with the emergency management and fire services communities to raise awareness, to increase preparedness, and to stand ready to provide Federal response assistance to State and local governments, if required." (*Federal Emergency Management Agency testimony before the Senate*.)

The Y2K problem... the Y2K glitch... the millennium bug. Whatever you call it, it's the inability of some computers and computerized systems to correctly recognize dates after 1999. Many products have microchips that have been programmed to process only the last two digits of a year on the assumption that the first two would be 1 and 9. As a result, 98 is read as 1998, and 00 could be read as 1900 instead of 2000. The problem has the potential to cause wide ranging system failures.

On September 22nd, the Senate Special Committee on the Year 2000 Technology Problem released a 288-page report outlining national and international preparedness for the millennium date change. The document is the result of nearly 30 hearings by the panel.

The committee, in its final report before Jan. 1, 2000, said "Much progress has been made and the panel is confident that a nationwide catastrophe will not occur." There was "...no data to suggest that the United States will experience nationwide social or economic collapse. Nonetheless, disruptions will occur and in some cases those disruptions will be significant."

The report, prepared by Senators Robert Bennett, R-Utah, and Christopher Dodd, D-Conn.,

said doctors' offices, nursing homes, inner-city and rural hospitals, school systems, local government and community functions ...and small businesses are the most vulnerable to computer breakdowns, primarily because they lack the money or technical ability to fix their computers.

Failures "will not occur across the nation. They will occur across the street." Big businesses, especially in the banking and investment industry, say they are ready. But many smaller businesses are sure to have trouble. The report states nearly 10% of all small businesses, plan to take no action at all.

"Y2K could affect the lives of individuals, but exactly in what manner is unknown." Y2K problems "will hit sporadically, based on geography, size of organization and level of preparedness, and will cause more inconveniences than tragedies."

The report emphasizes that national preparations have gone well and that federal agencies are ready ...as are the nation's financial services. Senator Bennett noted that the federal government will have spent about \$8 billion to fix its computers and the nation as a whole - anywhere from \$50 billion to \$150 billion.

This investment, Bennett said, "appears to

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have paid off." National power grids, telephone systems, ATM machines and air travel should work fine Jan. 1, he said. "Banks will have money on hand if, as has been estimated, each American household withdraws an average of \$500." Some states, however, lag behind.

The report warned against overreacting, saying, "One great area of concern is that panic buying and stockpiling of food might result in a self-fulfilling prophecy resulting in shortages and disruptions."

The report singled out several states that are unprepared for administering federal programs. Alaska, Alabama, California, Colorado, Hawaii, Massachusetts, New Hampshire, New Mexico, North Carolina, North Dakota, Vermont, and Wyoming are all at "considerable risk" for Y2K failures. These states had repaired less than 70 percent of the data-processing systems that handle Medicare/Medicaid, food stamps, unemployment insurance and children's nutrition and health insurance.

Of particular concern was the lack of preparedness in local 911 systems. According to the report, as of August 1999, only 34 percent of 911 systems are ready and 47 percent of local communities are still working on the problem. While 911 services are national in scope, they are run locally. In total, they receive more than 100 million emergency calls each year.

Local wastewater treatment systems are also at risk. The vast majority of Americans use city water treated in a plant. Though confidence remains high given the amount of attention paid to water, a low 14 percent Y2K readiness rate caused the panel a great deal of apprehension.

Internationally, the Y2K picture is disturbing, especially in Russia, China, Italy and several oil-producing countries. Disruptions in oil flow could affect gas prices, although the Energy Department believes this will not occur. About half of the 161 countries assessed were at medium to high risk of having Y2K-related failures in their telecommunications, energy, and/or transportation sectors.

"It is a mistake to believe that disruptions abroad won't hurt us here," said Bennett. "Economies are global, and Y2K disruptions will be experienced globally."

Though Bennett recently remarked that he would be willing to fly out of the U.S. to those select countries characterized by the State Department as being sufficiently prepared for Y2K, he did express "deepening concern" over the international picture as a whole.

The Federal Emergency Management Agency (FEMA) plans to have over 800 employees on duty from 28 December to 4 January. Worst-case Y2K scenarios have FEMA officials calling out National Guard troops to restore power, distribute food -- or even impose curfews and quell riots.

The Stafford Act of 1984 allows the military to help during natural disasters. After a natural disaster -- and presumably a Y2K disruption qualifies -- a governor can

ask the president to declare a state of emergency. Once the emergency has been declared, soldiers on active duty can be deployed as directed by FEMA.

FEMA's approach to Y2K consequence management includes several planning assumptions. It assumes that

- (1) no major nationwide catastrophic disruptions are expected,
- (2) smaller, localized disruptions could occur simultaneously, and
- (3) responses will be handled at local/State level to the maximum extent possible.

Should it become necessary, a Presidential "emergency" rather than a "major disaster" will be declared, and assistance will be focused on addressing threats to life, health, safety, and property.

To prevent an expected explosion of litigation and frivolous lawsuits, President Clinton has signed "The Year 2000 (Y2K) Act" into law. The legislation's objective is to encourage people to fix Y2K problems rather than to fight them in court.

The Y2K Act establishes a 90-day waiting period before people can file a Y2K related lawsuit. It does not prevent consumers who have been harmed from eventually filing suit, however. The Y2K Act expires after three years.

- The U.S. Nuclear Regulatory Commission (NRC) has acknowledged that six nuclear power plants in the United States remain unprepared for possible Year 2000 computer problems.
- "If you don't comply, you don't fly." On October 5th, legislation was introduced into Congress to give the FAA the authority to ground air carriers who have not answered a questionnaire on the carriers' Y2K status. Some 1368 small domestic air carriers have not yet responded to the FAA's Y2K survey. The bill would give the carriers in question until Nov. 1st to respond or be grounded.
- According to major consumer product trade associations, most appliances in your home, such as coffee makers, microwaves, clock radios, and heating and cooling equipment, will not be affected by the Y2K problem because they use clock as opposed to calendar functions that include a month and year.

Elevators in high rise buildings should not experience any problems related to the Year 2000 date change since they also are not "date-dependent." However, elevators tied into larger building-control systems could be affected if such systems are not Y2K compliant.

Even those products that do have calendars, such as VCRs and camcorders, are not likely to have problems unless they are older models purchased before 1987. [If you have an older VCR, a way around the problem is to set the calendar in December for 1971 since 1972 has the same monthly calendar line-up as 2000.]

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FCC REVISES RF TECHNICAL BULLETIN No. 56

The FCC's Office of Engineering and Technology (OET) has issued a revised technical bulletin entitled, "Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields."

This is the fourth edition of OET Bulletin 56, first issued in the early 1980's. The bulletin provides updated information to the public and others on the topic of potential biological effects and hazards of radiofrequency (RF) energy.

In 1996, as a result of its responsibilities under the *National Environmental Policy Act*, the Commission adopted revised guidelines for human exposure to RF emissions from FCC-regulated transmitters. The Commission's guidelines are discussed in this bulletin as are other relevant topics such as scientific research in this area. A list of references and related Internet Web sites is also provided.

The new version of OET Bulletin 56 is available at the FCC's Internet Web site (www.fcc.gov/oet/rfsafety). Here is what the new OET 56 has to say about Amateur Radio:

Are RF Emissions from Amateur Radio stations harmful?

There are hundreds of thousands of amateur radio operators ("hams" worldwide. Amateur radio operators in the United States are licensed by the FCC. The Amateur Radio Service provides its members with the opportunity to communicate with persons all over the world and to provide valuable public service functions, such as making communications services available during disasters and emergencies.

Like all FCC licensees, amateur radio operators are expected to comply with the FCC's guidelines for safe human exposure to RF fields. Under the FCC's rules, amateur operators can transmit with power levels of up to 1500 watts. However, most hams use considerably less power than this.

Studies by the FCC and others have shown that most amateur radio transmitters would not normally expose persons to RF levels in excess of safety limits. This is primarily due to the relatively low operating powers used by most amateurs, the intermittent transmission characteristics typically used and the relative inaccessibility of most amateur antennas.

As long as appropriate distances are maintained from amateur antennas, exposure of nearby persons should be well below safety limits. This has been demonstrated by studies carried out by the FCC and others.

If there were any opportunity for significant RF exposure, it would most likely apply to the amateur opera-

tor and his or her immediate household. To help ensure compliance of amateur radio facilities with RF exposure guidelines, both the FCC and American Radio Relay League (ARRL) have developed technical publications to assist operators in evaluating compliance of their stations.

OET also publishes Bulletin 65 (August 1997) entitled: "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." Three supplements to this bulletin have also been issued: Supplement A (additional information for radio and television broadcasters), Supplement B (additional information for amateur radio operators), and Supplement C (additional information for evaluating mobile and portable RF devices)

All amateur operators are required to certify that they have read and will comply with the Amateur Service section of OET Bulletin 65. This certification statement appears on all Amateur Service application forms. That bulletin may also be downloaded from the OET Internet Web site.

PHASE 3D TO BE LAUNCHED ABOARD ARIANE 5

AMSAT's most ambitious project to date -- the International Phase 3D communications satellite -- has now been accepted for launch aboard an Arianespace Ariane 5 launch vehicle. On October 8th, Dr. Karl Meinzer, DJ4ZC, AMSAT-Germany's President and Phase 3D Project Leader released the following statement:

"As the primary agency responsible for securing a launch opportunity for Phase 3-D, I am pleased to announce that AMSAT-Germany and Arianespace have now come to an agreement calling for the launch of P3-D as a secondary payload aboard the "first suitable" Ariane 5 flight."

Dr. Meinzer went on to comment that, "From the very beginning of the Phase 3-D project, we considered the Ariane 5 series our primary launch vehicle. Our long history of success and mutual cooperation with both the European Space Agency (ESA) and Arianespace, coupled with our need to lift P3-D into a high geostationary transfer orbit, made the Ariane 5 the unanimous choice by AMSAT." Specific details of the launch agreement were not released.

AMSAT-NA President Keith Baker, KB1SF, was elated with the latest news. "I'm very pleased to see that AMSAT-DL's negotiations with Arianespace have resulted in a launch contract for Phase 3-D, and I'm delighted we are again slated to fly on an Ariane vehicle," he said. "Following the resounding success of Ariane flight 503, the Ariane 5 has now proven itself to be a very capable launcher. When coupled with our many past successes with ESA and Ariane, I believe we now have an unbeatable combination. Once it is in orbit, the Phase 3-D satellite will not only help us usher in the new millennium, it will also signal the dawn of a brand new era for

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Amateur Radio," he concluded.

While both AMSAT presidents expressed optimism for an early launch of the satellite, Dr. Meinzer expressed caution that the wait for the "first suitable" flight could still turn out to be a long one. "While the launch of Phase 3-D could come as early as the first half of the year 2000, we must remember that Ariane's launch manifests are continually being updated to accommodate market changes as well as the availability of other payloads.

Thus, one or more changes to P3-D's anticipated launch date, along with its specific Ariane 5 mission number, are a very real possibility before our satellite actually flies," he said.

Nevertheless, based on its new 'standby' launch status, Phase 3D is slated to be delivered to the Guiana Space Center in Kourou, French Guiana later this month so as to be ready for quick integration once Arianespace identifies a specific Ariane 5 launch vehicle for P3D's ride to orbit.

While its primary focus is on improved worldwide satellite communications, the Phase 3D satellite will also have a very positive influence on the very future of Amateur Radio. Built primarily from donated resources, the International Phase 3D team includes participating AMSAT groups from Austria, Great Britain, Japan, Canada, Finland, Russia, Belgium, the Czech Republic, Slovenia, France, New Zealand and Hungary, in addition to the groups from AMSAT-Germany and AMSAT-North America.

AMSAT is very proud of its long tradition of excellence and the contributions it has made to the advancement of space communications, space education and the space sciences. Phase 3D will be Amateur Radio's premier vehicle to continue the quest for new communications technologies for generations yet unborn.

Final Phase 3-D Transponder frequencies

P3-D Uplink Frequencies

Uplink	Digital	Analog Passband
15 m	none	21.210-21.250 MHz
12 m	none	24.920-24.960 MHz
2 m	145.800-145.840 MHz	145.840-145.990 MHz
70 cm	435.300-435.550 MHz	435.550-435.800 MHz
23 cm (1)	1269.000-1269.250 MHz	1269.250-1269.500 MHz
23 cm (2)	1268.075-1268.325 MHz	1268.325-1268.575 MHz
13 cm (1)	2400.100-2400.350 MHz	2400.350-2400.600 MHz
13 cm (2)	2446.200-2446.450 MHz	2446.450-2446.700 MHz
6 cm	5668.300-5668.550 MHz	5668.550-5668.800 MHz

P3-D Downlink Frequencies

Downlink	Digital	Analog Passband
2 m	145.955-145.990 MHz	145.805-145.955 MHz
70 cm	435.900-436.200 MHz	435.475-435.725 MHz
13 cm (1)	2400.650-2400.950 MHz	2400.225-2400.475 MHz
13 cm (2)	2401.650-2401.950 MHz	2401.225-2401.475 MHz
3 cm	10451.450-10451.750 MHz	10451.025-10451.275 MHz
1.5 cm	24048.450-24048.750 MHz	24048.025-24048.275 MHz

■ Canada has proposed to streamline the administration of their Amateur Radio Service by discontinuing amateur station licensing. Instead, the authorization and control of amateur radio apparatus would be achieved through the issuance of an Amateur Radio Operator Certificate and a copy of the "Standards for the Operation of Radio Stations in the Amateur Radio Service." The call sign would appear on the operator certificate which would not expire. Also eliminated would be the \$24.00 annual license renewal fee.

Canadian amateurs are concerned that there would be no way to keep the database up to date since operating authority and callsigns would never expire. Some fear that address changes and silent keys would never be submitted to the Government. One suggestion is that their national society, Radio Amateurs of Canada should maintain the database. There are also concerns that without license fees to help pay for enforcement, the service would turn into a CB band. Some amateurs want to retain Amateur Radio licensing, but with a longer (5 year) renewal term and lower fees.

■ The FCC is continuing its attempt to clean up the garbage that exists on 80 meters. Riley Hollingsworth has sent a follow-up letter to **Sidney Mahan, K5BLB of Estancia, NM** and enclosed a tape recording made of his Amateur station transmissions on August 13 on the frequency 3.950 MHz. Hollingsworth asked for a written explanation signed before a Notary Public. **Chris D. Risher, KD6INK of Oakland, CA** is no longer an Amateur. Hollingsworth cancelled his ham ticket when he failed to show up to retake his Technician Class license exams at the FCC's Field Office in Hayward, CA by Sept. 30. **James E. Keller, KF4JOP of Hueytown, AL** turned in his Extra Class ticket to the FCC for cancellation effective October 1. He had been ordered to retake all license examinations up to and including the Extra Class at the Atlanta FCC Office. The FCC has received many complaints about the operation of WA6CNQ involving obscenity, profanity, failure to identify and deliberate interference to the K7IJ repeater. Riley Hollingsworth has now notified licensee **Danny A. Kenwood of San Francisco** that he is prohibited from operation above 30 MHz for a period of 90 days. He was given 30 days to protest the modification which expires on Jan. 5, 2000. **Todd Young, W6TLKY of Culver City, CA** and **Brian Frobisher WA6JFK of Los Angeles** have both been sent formal Warning Notices by Hollingsworth. They were advised that "The Commission has monitoring evidence that you have been deliberately and maliciously interfering with repeater operations of other Amateurs in your area." The interference, which included playing tapes and music to jam the KJ6TQ and WB6TZY 2-m and 70-cm repeaters, has occurred at various times since August 1997. "Operation of the type – even one incident – will result in a monetary fine being levied against you and in revocation proceedings..." Both were asked to contact the FCC to discuss the matter.

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CUTTING EDGE TECHNOLOGY

■ **As electric utilities upgrade their customers' meters to newer models** (some electric meters today even transmit their readings directly to the power company through an RF link), more customers complain about their rates "going up." In reality, the equipment is just working better. Old analog electric meters tend to slow down as they wear out, which gradually makes them show less power consumption than what is actually being used. So don't be surprised when you open your electric bill after your meter is upgraded.

■ **Stock exchanges are in the process of upgrading from fractions to decimals.** Some investment firms already offer the option of referring to stock quotes in either form on their Web sites. Such a transition makes it easier for computer operation and human understanding (we don't use fractions as much anymore).

■ **Older time-domain reflectometers (TDRs) were often tricky and cumbersome to use.** Cable TV companies and telecommunications firms track cable faults with TDRs all the time, but with the advantage of modern versions. Instead of having to guess a cable's propagation constant and other settings that could throw off readings, all the user must do is enter the name of the cable being tested – by brand or type. The necessary testing parameters are already loaded into the TDR and the display automatically tells you the distance to any cable fault.

■ **Studio musicians often use cut-and-paste digital technology to literally create their own sounds.** A mouse lets you draw the waveform you want, which is then downloaded into a synthesizer. But technicians and engineers do the same thing when designing and troubleshooting electronic circuits. Complex waveform generators can cut, paste, reverse, etc. on a video screen to give circuitry a workout and better simulate real-world conditions.

■ **Engineers and technicians once had to use time-exposure photography to capture certain types of signals on oscilloscopes.** Hewlett-Packard's Infinium 'scopes now can be upgraded through software to include color-grade persistence, which means a particular waveform can be displayed with changes of color to indicate phosphor persistence.

■ **If your transmitter or receiver is leaking RF and you can't find the cause,** take another look at the RF-gasket seal. Just because it's intact may not mean that it's still working. Yes, shielding gaskets in RF circuitry can and do degrade over time.

■ **One of the latest gimmicks in RF shielding is the in-line EMI filter** for standard D-sub connectors, often found on computer peripherals. The thin, flexible filters literally fit inside the connectors themselves. You just slide them over the pins and reconnect the cable. They're made by Microelectronic Manufacturing.

■ **Tools left inside airframes by airplane mechanics is relatively rare these days.** But how do you find a wrench or a screwdriver inside a maze of pipes, tanks and wire bundles? One way is the Aeroprobe Tool Detection System. It homes in on metal tools that can be magnetized. Since most airframes are made of aluminum or other non-magnetic materials, the detector homes in on a leftover tool and tells the mechanic via a tone in the headphones exactly where to look. Metal "I.D." tags can be installed on non-metallic tools and other devices.

■ **You may have read or seen the BayGen Freestyle radio...** It's got a windup crank on the side. Ever wonder how it works? Cranking the handle winds a spring around a reel, which then slowly unwinds to relieve tension. A combination of gears then turns a DC generator, which in turn charges up a large capacitor. (Why not try something similar for Field Day next year?)

■ **Astronomers are often reluctant to calibrate large, expensive telescopes on the brightest stars** because there is no guarantee that stellar objects won't suddenly change their appearance in some way. With high-powered lasers at their disposal, astronomers often create their own "target stars" by firing bursts of light high into the atmosphere. This tells them how our blanket of air affects known, quantifiable bursts of light at a particular frequency.

■ **The latest version of MathCAD, a popular scientific mathematics software package,** now allows users to save worksheets in the HTML format so they can post the mathematical terms, equations and graphical solutions on their Web pages on the Internet.

EMERGING COMMUNICATIONS

■ **Where is the ideal place on Earth from which to launch a satellite? The equator.** That takes maximum advantage of the planet's rotational velocity and gives the rocket an extra "boost," requiring less fuel and offering more payload capacity.

But from a safety standpoint, any ground-based launch complex on the equator should be very close to an ocean so any rocket failures won't hurt anyone. That's why there is a busy rocket complex in French Guiana, in northeastern South America; it's only about five degrees from the equator.

But the Sea Launch Co. has just launched a communications satellite into orbit from a water-based launch pad in the middle of the Pacific Ocean, very close to the equator, about 1400 miles southeast of Hawaii.

■ **Hughes Space and Communications launched its fourth high-power DBS (direct-broadcast satellite) built for DirecTV October 9th.** It was the first commercial satellite sent up from the ocean-based Sea Launch platform. The satellite will be used to deliver local broadcast TV channels to approximately 50 million homes, or about half of the nation's television households.

The satellite will enable DirecTV to better compete with cable by allowing customers in 20 major television markets to receive their local television stations.

Congress has yet to approve pending legislation allowing satellite-delivered local programming. DirecTV says it could be offering local programming by year end.

■ **"Earth orbit in 30 minutes, or it's free!"** To literally launch a new advertising campaign, Pizza Hut has paid about \$1.25 million to paint its new logo on the side of a Russian rocket that will go into space in the middle of November. The Proton rocket, with the 30-foot logo, will carry a major module to be attached to the International Space Station.

■ **"Curses! Foiled again!"** Parents of young children may be interested in a new device called Curse Free TV, which attaches to the set and blocks offensive language that appears in closed-caption text. LifeWay Christian Stores markets the device nationwide for about \$150. It deletes offensive slang words and can even be set to different levels so

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that it removes references to God when used offensively. Curse Free TV can't catch everything, of course; it won't work on live captioning and can't do anything about the pictures on the screen.

■ **By the end of 1999, all new television sets over 13 inches in size sold in the U.S. will have to contain a V-chip which permits parents to choose the level of violence and sexual content TV programming that will be allowed into the home.** The V-chip, which can also block encoded VHS and DVD movies, was mandated by Congress as part of the 1996 Telecom Act. All TV shows and encoded movies have a signal embedded in them that gives the show a rating, and the chip can detect these ratings.

The FCC approved a program rating system in March 1998 (ET Docket No. 97-206.) The ratings that Commission settled on are: TV-Y - zero violence or sexual content - all children can watch; TV-Y7 - for children 7 and over; TV-G - for general audiences - no sex, violence or inappropriate language; TV-PG - Parental guidance suggested; TV-14 - Suitable only for people over 14 - some sex or violence and TV-MA - Suitable only for mature audiences - may contain graphic violence or sexual situations. For example: if a parent programs TV-PG, the television will show all TV-Y, TV-G and TV-PG shows, but will block TV-14 and TV-MA.

How it works: The ratings are encoded into line 21 of the vertical blanking interval (VBI). The chip simply decodes Field 2 of the line 21 data, compares it with the parent's allowed rating and then either blocks the signal or lets it through. Field 1 of line 21 of the VBI is reserved for closed captioning information. Field 2 may carry captioning as well as program information such as content advisories.

■ **E-mailers can now "erase" sensitive messages held on the PC hard drives of recipients!** A new company called Disappearing, Inc., has developed e-mail that self-destructs after it has been read. It works when the sender puts a "time bomb command" in an encrypted message which orders it to disappear after a predetermined length of time.

The new process is somewhat somewhat similar to PGP encryption in that it scrambles the mail with an electronic key which is also held by the recipient. Where it differs is that the sender can decide how long the key will work after message receipt. After that, the key "self destructs" (becomes unusable) and the message can't

be read by anyone. The recipient has the option to copy the message to another file if the e-mail is to be retained.

■ **First it was WorldCom, then (after purchasing the No. 2 long-distance provider, MCI) it became MCI WorldCom.** Now that No. 3 Sprint Corp. is to be added to the mix, the name will revert back to WorldCom. That is if regulators will permit the merger. The new WorldCom, however, will still maintain both the MCI and Sprint brands.

NBA-star Michael Jordan signed a 10-year deal in 1996 to promote LDDS WorldCom which evolved into WorldCom. The deal was made because Chairman Bernie Ebbers, a former basketball player, and high school coach, was a fan of Jordan.

COMPUTER INFO

■ **The price of data storage continues to drop.** It currently costs a little less than 2.5 cents to keep a megabyte of data on tape or disk. Within two years, it will cost just a little more than half a cent to store the same amount of information.

■ **In the early days of the IBM PC,** a 10-megabyte hard drive was considered so large that it could never be filled. Today, however, hard drives capable of storing 40 gigabytes and more are considered necessary.

■ **A "radio mix" of a song may be created if it contains lyrics** that some listeners may find objectionable. But rather than go to the time and expense of gathering singers and musicians to do another take in the studio, an audio engineer simply changes the offensive material with a computer. An offensive word can be digitally cut out and replaced with a sound effect, or the same word said backwards, or an instrumental note from another portion of the song.

■ **Gentle reminder** You may not have needed to use the floppy disk drive of your computer lately, since most software today comes on CD-ROM and most hard drives are large enough to hold just about everything. But think about it - should your hard drive fail and you need to reload software from you're A-drive, will the drive still work? Hams know that idle equipment can fail, so exercise the floppy drives every once in a while.

■ **MagnaPlan Corp.'s Electronic**

Whiteboard lets you draw words, equations, diagrams or anything else on a vertical whiteboard and automatically download those images into a PC for wide viewing and printing. It handles different colors and can print multiple copies. Images can be bitmapped and transferred into other software packages, so they can be pasted to a Web page or included in a student's notes.

■ **For serious computer artists, the Intuous 4D Mouse offers a pressure sensor and a fingerwheel** for better control of "ink" flow. The mouse can be used easily with either hand, and once a favorite setting is made, the mouse can tell the software to keep it set that way (as "oil brush" or "charcoal," for example). Wacom Technology Corp. also offers pressure-sensitive graphics tablets and "pens" with over a thousand pressure levels. All can be used with Adobe Photoshop.

■ **The next update of the Oxford English Dictionary may not see wide distribution in print form.** The third edition, due out in 2010, would fill an expected 40 volumes. That would cost too much to print, few libraries have that much storage space, and even fewer readers would buy it - the price covers at least three digits. Besides, why flip through thousands of pages for one word when a computer-based version can do it for you instantly? Most word processors already include a built-in dictionary and thesaurus.

The OED is already available on CD-ROM, and chances are the next edition of the world's most comprehensive book on the English language will be primarily in digital form. The vast majority of the 750,000 words have limited use, and the average person gets along well in everyday activities with only a few thousand. How cogitable.

INTERNET NEWS

■ **Oracle, Motorola and Sun Microsystems are teaming up to bring Internet content to cellular telephones.** Motorola's voice-based technology allows users to give commands or retrieve information using only the voice. Oracle has a product that delivers customized Internet content to any wireless device. Sun's "Jini" allows devices to participate in a network regardless of the hardware or software.

■ **Internet-enhanced television is on**

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the way Intel Corp. and leading mobile phone maker Nokia have formed a partnership to make television set-top boxes that combine the features of the Internet with broadcast TV. Intel wants to move the Internet into telephones, televisions and automobiles.

■ **Growth of the Internet, Web advertising, browsers and e-commerce.**

— Market Research firm International Data Corp. (IDC), Framingham, MA estimates that there were approximately 142 million users of the Internet at the end of 1998 — about 4 percent of the world population. That number will grow globally to over 500 million users — or 11 percent — by the end of 2003.

Sixty-two percent of the US population will be online by 2003. The amount of users with permanent dedicated Internet access will grow from 29 percent today to 53 percent in 2003. And thirty-three percent of households will have broadband high-speed access.

IDC predicted that by that date, 80 percent of all business transactions will be carried out online and that US \$2 million dollars will change hands every minute. IDC estimates that worldwide e-commerce revenue will increase from approximately \$50 billion in 1998 to more than \$1 trillion in 2003 — a twenty-fold gain.

An IDC study showed that Microsoft's IE browser was gaining on Netscape's browser, holding a 27.5 percent share versus Netscape's 41.5. However, when AOL users — who get IE by default, though they don't have to use it — are added into the mix, Microsoft's share jumps to 43.8, leapfrogging Netscape.

According to Jupiter Communications, total Internet advertising revenues were \$2.1 billion in 1998 and are expected to grow to \$11.5 billion in 2003, representing an average annual compounded growth rate of approximately 41% from 1998 to 2003.

■ **A new Internet company called NetGift Registry** plans to start an all-purpose gift registry before the holidays. Online retailer Amazon.com Inc. has invested in Internet wedding-gift registry Della & James, Inc. of San Francisco. Other investors include retailers: Neiman Marcus Group Inc., Williams-Sonoma Inc. and Crate & Barrel. Amazon now has 10.7 million customers and has expanded into toys and consumer electronics. It also bought stakes in other online businesses, such as Drugstore.com, Pets.com and Home Grocer.com. According to

Forrester Research sales of gifts online are expected to reach \$17 billion by 2004.

■ **Page someone over the Internet** — Britain's largest Internet Service Provider, "Freeserve" is launching a new service to allow its customers to have their e-mails forwarded to a pager. Freeserve's "e.notifier" (US\$32.70) comes with the first three months' email notifications free. After that, the cost goes to about \$5/month billed quarterly.

Freeserve pioneered subscription free Internet access in Britain. The new product is being launched in association with PageOne Communications Ltd, the second largest paging operator in the UK. It will allow Freeserve customers to receive up to 240 characters of e-mail notifications when they are away from their PC or the computer is switched off.

■ **Travelocity.com has bought Preview Travel Inc.** and will form a new publicly-traded travel company headquartered in Fort Worth, TX. Online travel, the largest retail e-commerce category, is projected to grow from \$7.8 billion in 1999 to \$32.1 billion by 2004.

Travelocity's owner, Sabre Inc., will contribute its online reservations system plus \$50 million in cash in exchange for 70 percent ownership in the new company. Sabre's parent is AMR which also owns American Airlines. The new company already has an exclusive five-year \$200 million deal with America Online.

Travelocity.com with more than 8 million registered users, had \$301 million in gross travel sales for the first half of 1999, exceeding the total \$285 million it recorded for all of 1998. Preview Travel has nine million registered members and reported gross bookings of \$200.1 million in 1998 and \$166.7 million in the first half of 1999.

After the deal, the combined firm would have more than \$1 billion in travel sales, topping Microsoft's Expedia.

■ **Many teenagers already play team-oriented videogames with players spread throughout the world in real time**, thanks to the Internet. Now the U.S. Air Force is gearing up to do the same thing with their flight simulators. Over the next decade, the USAF will sink half a billion dollars into linking flight simulators at over 50 air bases around the globe on their own dedicated network so pilots can fly "in formation" in a variety of planes and weather conditions, and even practice virtual dogfights. The Air Force

wants to save money on travel and equipment and keep pilots at their home bases more often.

WASHINGTON WHISPERS

■ **Hackers and cyber-terrorists are a threat to crucial U.S. information systems** says the General Accounting Office. "Our nation's computer-based critical infrastructures are at increasing risk of severe disruption."

The GAO is the federal government's watchdog who answer only to Congress. Some of the shortcomings specifically mentioned in their report are potential threats to the nation's air traffic control, national defense, tax collection, and law enforcement systems.

It said it had "even greater concerns" about private-sector systems that control energy, telecommunications, financial services, transportation and other vital services adding that private companies were "understandably reluctant" to disclose problems which might undermine customer confidence.

■ **The public comment period on MM 99.25, "Creation of Low Power FM Radio Service for Local Communities" closed on Aug. 2, 1999 after being extended twice.**

This proceeding seeks to establish up to three new low power FM broadcast station classes: 1-10 watt (LP-10), 100 watt (LP-100) and 1000 watt (LP1000). The reply comment period in this proceeding was also extended to Sept. 1, 1999 to provide time for engineering and other studies.

The Reply Comment period has now been further extended to Nov. 5, 1999, two weeks after the Commission is scheduled to adopt *Notice of Proposed Rulemaking* regarding digital audio broadcasting on Oct. 21, 1999.

■ **FCC Chairman Bill Kennard told about the coming reorganization of the FCC** during remarks he gave on October 5th at the Georgetown University Law Center. He said:

"In five years, I expect the U.S. communications markets to be characterized by vigorous competition that will greatly reduce the need for direct regulation."

"I believe that in that same time period, the FCC will change radically from what it is today. The American consumer

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does not switch from wireline phone to wireless phone, and think 'Well, now I'm moving from the Common Carrier Bureau to the Wireless Bureau.'

"The new driving functions are not types of technologies, but procedures that apply to all technologies: Policy, Licensing, Enforcement, and Consumer Information. Those are the drivers at the new FCC.

"They replace the old drivers of the Common Carrier, Wireless, Cable and Mass Media Bureaus, the regulatory niches in which many industries have had to fit. ...this should mean one-stop digital shopping.

"Today I am pleased to announce that our Congressional oversight committees have approved our proposal for an Enforcement Bureau and a Consumer Information Bureau. Those bureaus will go into operation in the very near future."

The FCC has released a study on telephone trends. While long distance rates have nose-dived, local phone rates have remained steady. The average monthly local residential charge for service was \$19.85 in October 1998 as compared to \$19.24 in 1990. For a business with a single phone line, the representative charge for service was \$41.28 in October 1998 as compared to \$41.21 in 1990.

Twenty million households have been added to the nation's telephone system since November 1983. As of March 1999, 98.5 million households had telephone service.

The number of calls made from the United States to other countries increased from 200 million in 1980 to 4.2 billion in 1997. In 1997, Americans spent about \$15 billion on international calls. On average, carriers billed \$0.67 per minute for international calls in 1997, a decline of 50% since 1980.

There are currently three toll free prefixes in use - 800, 888, 877 - with almost 20 million toll free numbers assigned as of the end of August 1999. Two new toll free codes - 866 and 855 - are expected to be placed in service in early 2000.

Labor-union powerhouse, AFL-CIO has announced it has a new initiative called "Wire Working Families." The goal is to make Internet service available to its 68-union 13 million member organization at under \$30 per month - which even includes the computer. Internet access alone will be under \$14.95/month.

It intends to use the site to "give workers a stronger voice and unions a new way to mobilize." It said it might use the Internet for such uses as "...to ask millions of Internet users to boycott a product, or bombard an elected official with protests?"

A spokesman for the labor coalition said its site, <<http://www.workingfamilies.com>>, will be up by Dec. 1. The AFL-CIO portal will offer all of the usual online services including e-mail, e-commerce, information, news and weather.

On October 1st, Great Britain's Radiocommunications Agency (RA) proposed to extend spectrum pricing into all areas of radio use. The new fees will reflect the value of the spectrum being used and will result in lower fees for the majority of smaller businesses who share channels, although it may mean higher fees for users of exclusive or congested spectrum.

Spectrum pricing helps to balance spectrum availability with demand and helps to promote efficient spectrum use and management.

The RA said "It is also recognized that spectrum pricing is not appropriate for licensing certain areas, such as aeronautical, maritime, amateur and citizen's band and the testing and development of new services."

While spectrum pricing will not be applied to UK ham tickets, the current annual £15 (US \$24) license fee apparently will continue. (No fees are collected from licensees under 21.) There are approximately 60,000 radioamateurs in Great Britain. Comments close on Dec. 31, 1999.

AMATEUR RADIO

After twenty years of service, long time ARRL staffer, Rick Palm, K1CE will be leaving the League effective Nov. 10. Palm, the League's Field Services Manager, and his wife Joanne, W1GUN will be moving to Florida. Rick met his wife at ARRL Headquarters in 1980 when she worked as a secretary in the former Communications Department.

In a message sent to Section Managers, K1CE said he wanted to "...let you know that Educational Services Manager Rosalie White, WA1STO, and I are working hard to see that you and your appointees will receive a seamless continuity of service. ...She has done a fine job in man-

aging the new Field and Educational Services Department since January."

Consideration of the Amateur and Amateur Satellite Service is still on the preliminary agenda for the 2001 World Radio Conference as approved at WRC-1997. For budgetary and scheduling reasons, Resolution 722, paragraph 2.2 adopted at WRC-97 moved the Amateur items from WRC-99 to 2001.

Article S25 concerns the definition of the amateur and amateur-satellite services and the necessary qualifications required for licensing, including the Morse code requirement for operation on bands below 30 MHz. Look for the International Morse code requirement to go the way of the horse-and-buggy at that time.

The proposal to harmonize the 40-meter (7 MHz) ham band with HF broadcasting and to provide a world-wide, common 300 kHz Amateur segment was also postponed from WRC-99 to the preliminary WRC-2001 agenda.

WRC-2001 will be held in late 2001 in Turkey. You can view the Preliminary Agenda for the 2001 World Radiocommunications Conference on the NTIA (National Telecommunication and Information Administration) website at: <<http://www.ntia.doc.gov/osmhome/wrc99pre/agnwrc01.htm>>

You can get quick information on new call signs, license upgrades and whether your renewal or address change has been received and handled by checking into the QRZ Daily FCC Report. All FCC daily licensing activity is archived at <<http://www.qrz.com/new.html>>. This is one of the most useful sites we have come across. The site is very professionally maintained by Fred Lloyd, AA7BQ (flloyd@qrz.com) of Scottsdale, AZ. Fred is also W5YI-VE No. 11547.

The information will be even more timely now since, as of October 4th, the FCC automatically uploads their new Universal Licensing System "public access files" to the Internet. No one needs to manually put them out on the Internet as previously was the case. QRZ is synchronized to automatically retrieve the information each night and apply it to their system by morning.

Now that the files are being automatically posted, you should see the information you need within 24 hours of being shipped to the FCC by a VEC or licensee. If you are a VE, you might want to tell your examinees about this site. They get the information out first!

What the international press is saying about Y2K!

We searched the Internet for Y2K press clippings published during early October. What we found was interesting!

"Some military experts fear that guerrillas or rogue states might launch assaults on communications networks under cover of the millennium computer bug in what's been called a possible 'Digital Pearl Harbor'. ...Logic bombs are a type of computer virus which can lie dormant for years and when given a signal will wake up and begin attacking the host system." *[Reuters, London]*

"Although air carriers say demand for overall holiday travel is strong, there's not much interest in flying on Dec. 31 and Jan. 1. 'New Year's Eve is always a relatively slow night, and this year it seems even more so as people make plans to celebrate the new millennium somewhere other than aboard a plane,' said Walter J. Aue, American Airlines vice president of capacity planning. American will cancel at least 20 percent of its 3,600 daily flights on New Year's Eve... *[Florida Sun-Sentinel]*

"Most U.S. businesses in critical industries such as banking, telecommunications, power and air traffic control, expect few problems, government and private agencies monitoring the issue say. U.S. investors keep pushing up stock prices, economic growth continues at a robust pace and polls show fewer people are concerned about Y2K problems." *[Patriot Ledger Quincy, MA.]*

"Transportation officials are uneasy about the readiness of mass transit systems for the year 2000, because huge New Year's Eve celebrations will send thousands of revelers toward public transportation just minutes after computers make the date change. If a Y2K bug paralyzes subway nervous systems or the electrical supply that runs trains in cities such as Boston, New York and Washington, operators will have virtually no time to make repairs or warn incoming riders." *[CNNfn, The Financial Network.]*

"According to several new country-by-country year 2000-readiness reports -- two of which were issued last month by the State Department -- and Britain -- travelers may face significant Y2K-related problems from Beijing to Buenos Aires.

In Russia, which has been slammed for its lack of preparedness, the State Department points to likely Y2K disruptions to electrical power, heat, telecommunications, transportation, and financial and emergency services.

According to the British report, Ukraine's finance, banking, power, transportation, defense and social sectors all could be vulnerable to Y2K snafus. Russia is close behind; 42 percent of the 3,904 information systems used in its nuclear-energy industry are date-dependent." *[IntellectualCapital.com.]*

"Federal agencies have been given high marks for moving quickly to fix Y2K problems, but of 43 federal programs deemed "high impact," 10 are administered by the states and not one of those is considered fully Y2K compliant." *[USA Today.]*

"Citing the potential for debilitating Y2K failures in developing nations worldwide, an international Y2K group today unveiled a "toolkit" that foreign government and industry leaders can use to identify and remediate Y2K exposures. The toolkits address issues such as internal system remediation, community preparedness and contingency planning." *[Computer Currents.com.]*

"End users face a threat from viruses deliberately written to activate at the year 2000 rollover, but should not be at special risk if they continue with comprehensive antivirus practices. Rumors of contract programmers tampering with code while doing remedial year 2000 work, or of a flood of 200,000 viruses to be released are largely hype. According to a survey carried out by the International Computer Security Association (ICSA), 56 per cent of infections this year were attributed to e-mail attachments." *[ComputerWorld, Australia.]*

"The big concern for investors right now is Y2K, and while we think Y2K is pretty much going to be a non-event, we may see a continuing market downdraft simply due to the perception of Y2K" said James Knaus, chartered financial consultant. He has a large amount of cash in the accounts he manages and is convinced of a tremendous stock buying opportunity the first quarter of next year." *[Chicago Tribune.]*

"Half of the companies responding to a recent survey indicated that they are imposing a year 2000 "freeze" on installing new systems or enhancing old ones. Half of the firms polled have already imposed an enterprise-wide lockdown or are planning to begin one soon that will carry through year's end. The purpose is to keep corporate computer environments year-2000-ready by not introducing any changes to existing software code or hardware." *[ComputerWorld]*

"Y2K Credit Card Scam -- A con artist calls and tells you that your credit card company wants to mail you a new magnetic strip to comply with Y2K. You are supposed to glue this strip over the old one. The caller asks for the first digit of your card -- and most begin with a certain number. (*All AMEX credit cards begin with a 3, VISA with a 4, MasterCard with a 5, Discover with a 6.*) Once the caller knows this, he or she will tell you the kind you have -- trying to sound official -- and then ask for the rest of your card number. With this number, the scam artist can make purchases on your account and obtain other cards in your name sent to different addresses." *[Pittsburgh Post-Gazette.]*

"State agencies that deal with the public -- especially those serving elderly people -- said they're getting the word out about scam artists waiting to prey on those nervous about Y2K. One common trick: People posing as bank officials who call and ask for account information." *[Detroit Free Press]*

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"Date-sensitive chips and software are found in everything from satellites to gas pipes to business computers. Around the world, millions of computers use thousands of programs, and pre-programmed chips operate autonomously in devices and vehicles out of sight and out of mind. This means there are millions of Y2K Problems, and 'solving' Y2K becomes akin to 'curing' every disease on Earth -- different remedies are needed for different people in different places with differing ailments." *[Westergaard Year 2000]*

"A USA Today/National Science Foundation poll last month found that few Americans expect major problems due to Y2K computer glitches. Only 7 percent of the 1,014 adults surveyed by the Gallup Organization expected their personal lives to be disrupted in a major way. Forty percent expected no problems at all.

[The state of Ohio] has created an Internet site (www.oy2k.state.oh.us) that advises citizens to prepare as if a major blizzard or ice storm was approaching. The site suggests that Ohioans should start the new year with five days worth of food on hand and a three-day supply of water (a gallon per day for each family member). They also should fill up their cars, have extra cash on hand and collect paper copies of important records before Dec. 31." *[Cincinnati Enquirer.]*

"FEMA and the Red Cross are recommending you prepare yourself for power loss, although they do not believe there will be a prolonged nationwide outage. What no government official is saying is that a nationwide blackout for 4-7 days can very well be the beginning of the worst case scenarios no one believes or wants to think is possible. Most utilities are reluctant to publicly list Y2K status. 'A lot of lawyers are concerned about liability.' Telling the truth is no longer a virtue, it is simply a legal liability." *[Westergaard Year 2000]*

"A majority of the nation's chief information officers and other executives plan to have hundreds, even thousands, of dollars on hand in case financial glitches hit when Jan. 1 arrives, according to a survey released Wednesday in Orlando. Sixty-five percent of the 191 executives surveyed said they plan to save more than \$500 for Y2K. Thirty-four percent of the group plan to save more than \$1,000, and 8 percent said more than \$5,000, according to the survey conducted by CIO magazine. *[Orlando Sentinel, FL]*

"Dates set by some states for completing their computer fixes are 'so close to the turn of the century that the risk of disruption to their programs is substantially increased,' said Joel Willemsen of the General Accounting Office, the investigative wing of Congress. Officials from the Health and Human Services, Agriculture and Labor departments on Wednesday told the House Government Reform Committee panel overseeing the Y2K issue that the delays were worrisome, although they were confident service would not be disrupted." *[The Evansville Courier & Press, IN.]*

"Police departments in some usually quiet Seattle suburbs are buying riot gear to be ready for New Year's Eve, whether it brings Y2K blackouts or just really big parties. Sales of batons, pepper spray and other such equipment have surged. 'A lot of departments wanted this stuff for a long time. The Y2K thing gave them an excuse to buy it now.' *[The Oregonian]*

"It has been said before, and until it is understood it will be said again: as we count down to 2000, it is becoming abundantly clear that in addition to fixing the problem with computers, we must consider the possibility that computer failures will cause interruptions, confusion, delays and in some cases, a complete inability for segments of the economy and government to function at all." *[Westergaard Year 2000]*

"At 11:55 p.m. on Dec. 31, the Y2K computer scare will bring all MARTA trains to a standstill. Atlanta is the latest major city that has decided to shut down its rail service briefly as calendars and clocks flip to 2000. The Chicago Transit Authority also will pause its rail service briefly from just before midnight until just after the new year begins.

French officials say they also will stop all trains and subway cars in the country between 11:55 p.m. and 12:15 a.m. in order to 'respond to the anxiety' of passengers, according to a statement issued earlier this week by the national train company. Of 550 federally funded operators surveyed by the Federal Transit Authority, only four indicated they were not Y2K compliant. All of them are in Puerto Rico. *[Atlanta Journal-Constitution.]*

"Half of the companies responding to a recent survey indicated that they are imposing a year 2000 'freeze' on installing new systems or enhancing old ones. Half of the firms polled have already imposed an enterprise-wide lockdown or are planning to begin one soon that will carry through year's end. The purpose is to keep corporate computer environments year-2000-ready by not introducing any changes to existing software code or hardware." *[ComputerWorld]*

"The Ohio Emergency Management Agency ran a six-hour drill Thursday that simulated more than 100 emergencies -- some of the worst things that might happen from New Year's Eve through Monday, Jan. 3. The state's concrete-reinforced emergency center on the outskirts of Columbus was bustling, but in a low-key, businesslike way. State officials will spend two weeks evaluating the practice run, Ohio's first full-scale rehearsal of its response to the potential for computer problems associated with the year 2000." *[Associated Press.]*

"Air New Zealand has joined the ranks of airlines cutting back services at the start of the new millennium, cancelling about 13 international flights. 'We are absolutely convinced that our systems have all been checked and given the big tick. People just want to stay on the ground.' Air New Zealand has told travel agents it is removing about 30 per cent of its international flights between midnight on December 31 and midnight on January 1. The airline normally runs between 30 and 40 international flights over the 48-hour period." *[The Press, New Zealand.]*

And finally, a Hong Kong woman forked out HK\$120,000 - US \$15,440 - to buy stomach pills from conmen after they told her they could cure the millennium bug, police said on Tuesday. The 43-year-old woman - who did not know the bug was a computer problem - was convinced her she could make handsome profits by reselling them. *[Fox News]*